

# FIRST REVISION TEST - 2025

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Standard - XI

Time: 3.00 hrs

## CHEMISTRY PART - I

Marks:70

15x1=15

Choose the correct answer.

- Carbon forms two oxides, namely carbon monoxide and carbon dioxide. The equivalent mass of which element remains constant?
  - Carbon
  - oxygen
  - both carbon and oxygen
  - neither carbon nor oxygen
- Two electrons occupying the same orbital are distinguished by
  - azimuthal quantum number
  - spin quantum number
  - magnetic quantum number
  - orbital quantum number
- Which of the following pairs of elements exhibits diagonal relationship?
  - Be and Mg
  - Li and Be
  - Be and B
  - Be and Al
- Assertion : Permanent hardness of water is removed by treatment with washing soda.  
Reason : Washing soda reacts with soluble calcium and magnesium chloride and sulphates in hard water to form insoluble carbonates.
  - Both assertion and reason are true and reason is the correct explanation of assertion.
  - Both assertion and reason are true but reason is not the correct explanation of assertion.
  - Assertion is true but reason is false
  - Both assertion and reason are false
- Flame colour of potassium salt in bunsen burner
  - Lilac (violet)
  - Crimson red
  - Apple green
  - Yellow
- The value of the gas constant R is
  - 0.082 dm<sup>3</sup> atm
  - 0.987 cal mol<sup>-1</sup>K<sup>-1</sup>
  - 8.3 J mol<sup>-1</sup>K<sup>-1</sup>
  - 8 erg mol<sup>-1</sup> K<sup>-1</sup>
- Molar heat of vapourisation of a liquid is 4.8 k J mol<sup>-1</sup>. If the entropy change is 16J mol<sup>-1</sup> K<sup>-1</sup>, the boiling point of the liquid is
  - 323K
  - 27° C
  - 164 K
  - 0.3K
- Match the equilibria with the corresponding conditions
 

i) Liquid $\rightleftharpoons$ vapour	1) Melting point
ii) Solid $\rightleftharpoons$ Liquid	2) Saturated solution
iii) Solid $\rightleftharpoons$ vapour	3) Boiling point

(2)

- iv) Solute (s)  $\rightleftharpoons$  solution (solute)
- a) (i) 1 (ii) 2 (iii) 3 (iv) 4  
 b) (i) 3 (ii) 1 (iii) 4 (iv) 2  
 c) (i) 2 (ii) 1 (iii) 3 (iv) 4  
 d) (i) 3 (ii) 2 (iii) 4 (iv) 5
9. According to Raoult's law, the relative lowering of vapour pressure for a solution is equal to  
 a) mole fraction of solvent  
 b) mole fraction of solute  
 c) number of moles of solute  
 d) number of moles of solvent
10. Bond order of a species is 2.5 and the number of electrons in its antibonding orbital is 3. The no of electrons in its bonding molecular orbital is  
 a) 8  
 b) 4  
 c) zero  
 d) 9
11. The general formula for alkadiene is  
 a)  $C_nH_{2n}$   
 b)  $C_nH_{2n-1}$   
 c)  $C_nH_{2n-2}$   
 d)  $C_nH_{n-2}$
12. Heterolytic fission of C-C bond results in the formation of  
 a) free radical  
 b) carbanion  
 c) carbocation  
 d) carbanion and carbocation
13. The compound that will react most readily with gaseous bromine has the formula  
 a)  $C_3H_6$   
 b)  $C_2H_2$   
 c)  $C_4H_{10}$   
 d)  $C_2H_4$
14. Chloroform reacts with nitric acid to produce  
 a) nitro toluene  
 b) nitro glycerine  
 c) chloropicrin  
 d) chloropicric acid
15. Ozone depletion will cause.  
 a) forest fires  
 b) eutrophication  
 c) bio magnification  
 d) global warming

## PART - II

Note: Answer any six questions. Question No. 22 is compulsory.

6x2=12

16. Write a note on limiting reagent.
17. Define modern periodic law.
18. Write diffusion law.
19. Define Gibb's free energy.
20. Define Le-chatelier principle.
21. Explain Inductive effect with suitable example.
22. Write a balanced chemical equation for the equilibrium reaction for which the equilibrium constant is given by expression.

(3)

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$$K_c = \frac{[NH_3]^4 [O_2]^5}{[NO]^4 [H_2O]^6}$$

23. Kolbe's electrolytic reaction.  
24. What are degradable and non-degradable pollutants.

**PART - III**[akwaacademy.blogspot.com](http://akwaacademy.blogspot.com)

Answer any six questions. Question number 33 is compulsory.

6x3=18

25. Differentiate oxidation and Reduction.  
26. Give the electronic configuration of  $Mn^{2+}$  and  $Cr^{3+}$ .  
27. Give the uses of Heavy water.  
28. Give the similarities between Lithium and Magnesium.  
29. What are ideal solutions?  
30. Write and draw the structure of  $IF_7$  and  $SF_6$  based on VSEPR theory.  
31. What are the conditions for optical activity.  
32. What happens when acetylene is passed through red hot tube?  
33. Write the structure of the following  
a) 2-Chloro-2-methyl propane    b) 3-Chloro-but -1 - ene    c) Acetaldehyde

**PART - IV**

Answer all the questions.

5x5=25

34. a) Balance the following equations by oxidation number method  
i)  $K_2Cr_2O_7 + KI + H_2SO_4 \rightarrow K_2SO_4 + Cr_2(SO_4)_3 + I_2 + H_2O$   
ii)  $KMnO_4 + Na_2SO_3 \rightarrow MnO_2 + Na_2SO_4 + KOH$

(OR)

- b) Define : Paulis Exclusion Principle and Hund's rule.

35. a) Explain Pauling's method, calculation of ionic radius.

(OR)

- b) i) Differentiate ortho and para hydrogen.  
ii) How will you prepare plaster of Paris.

(4)

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36. a) Derive critical constants from Vanderwaals constants.

(OR)

b) List the characteristics of internal energy.

37. a) Derive differential form of Van't Hoff equation.

(OR)

b) Describe the classification of organic compounds based on their structure.

38. a) (i) Explain Wurtz fittig reaction.

(ii) Carbylamine reaction.

(OR)

b) Explain the structure of benzene.

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